

INTERNATIONAL EXECUTIVE REVIEW



Editor: René Oudeweg

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x86 -> 8,6 -> 6,8

Intel corp is opgericht in 1968

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Timeline: A brief history of the x86 microprocessor¹

Gary Anthes

5–6 minutes

Here's a peek at the events and technologies that led to the development of [Intel's x86 architecture](#), plus milestones in its 30-year reign.

1947: The transistor is invented at Bell Labs.

1965: Gordon Moore at Fairchild Semiconductor observes in an article for *Electronics* magazine that the number of transistors on a semiconductor chip doubles every year ([download PDF](#)). For microprocessors, it will double about every two years for more than three decades.

1968: Moore, Robert Noyce and Andy Grove found Intel Corp. to pursue the business of "INTEgrated ELectronics."

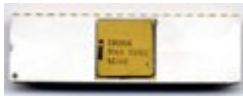
1969: Intel announces its first product, the world's first metal oxide semiconductor (MOS) static RAM, the 1101. It signals the end of magnetic core memory.

1971: Intel launches the world's first microprocessor, the 4-bit 4004, designed by Federico Faggin.

¹ <https://www.computerworld.com/article/2535019/timeline--a-brief-history-of-the-x86-microprocessor.html>

The 2,000-transistor chip is made for a Japanese calculator, but a farsighted Intel ad calls it "a microprogrammable computer on a chip."

1972: Intel announces the 8-bit 8008 processor. Teenagers Bill Gates and Paul Allen try to develop a programming language for the chip, but it is not powerful enough.



The Intel 8080

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1974: Intel introduces the 8-bit 8080 processor, with 4,500 transistors and 10 times the performance of its predecessor.

1975: The 8080 chip finds its first PC application in the Altair 8800, launching the PC revolution. Gates and Allen succeed in developing the Altair Basic language, which will later become Microsoft Basic, for the 8080.

1976: The x86 architecture suffers a setback when Steve Jobs and Steve Wozniak introduce the Apple II computer using the 8-bit 6502 processor from MOS Technology. PC maker Commodore also uses the Intel competitor's chip.

1978: Intel introduces the 16-bit 8086 microprocessor. It will become an industry standard.

1979: Intel introduces a lower-cost version of the 8086, the 8088, with an 8-bit bus.

1980: Intel introduces the 8087 math co-processor.

1981: IBM picks the Intel 8088 to power its PC. An Intel executive would later call it "the biggest win ever for Intel."

1982: IBM signs Advanced Micro Devices as second source to Intel for 8086 and 8088 microprocessors.

1982: Intel introduces the 16-bit 80286 processor with 134,000 transistors.

1984: IBM develops its second-generation PC, the 80286-based PC-AT. The PC-AT running MS-DOS will become the de facto PC standard for almost 10 years.

1985: Intel exits the dynamic RAM business to focus on microprocessors, and it brings out the 80386 processor, a 32-bit chip with 275,000 transistors and the ability to run multiple programs at once.



The Intel 80386

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1986: Compaq Computer leapfrogs IBM with the introduction of an 80386-based PC.

1987: VIA Technologies is founded in Fremont, Calif., to sell x86 core logic chip sets.

1989: The 80486 is launched, with 1.2 million transistors and a built-in math co-processor. Intel predicts the development of multicore processor chips some time after 2000.

Late 1980s: The complex instruction set computing (CISC) architecture of the x86 comes under fire from the rival reduced instruction set computing (RISC) architectures of the Sun Sparc, the IBM/Apple/Motorola PowerPC and the MIPS processors. Intel responds with its own RISC processor, the i860.

1990: Compaq introduces the industry's first PC servers, running the 80486.

1993: The 3.1 million transistor, 66-MHz Pentium processor with superscalar technology is introduced.

1994: AMD and Compaq form an alliance to power Compaq computers with Am486 microprocessors.

1995: The Pentium Pro, a RISC slayer, debuts with radical new features that allow instructions to be anticipated and executed out of order. That, plus an extremely fast on-chip cache and dual independent buses, enable big performance gains in some applications.

1997: Intel launches its 64-bit Epic processor technology. It also introduces the MMX Pentium for digital signal processor applications, including graphics, audio and voice processing.

1998: Intel introduces the low-end Celeron processor.

1999: VIA acquires Cyrix Corp. and Centaur Technology, makers of x86 processors and x87 co-processors.

2000: The Pentium 4 debuts with 42 million transistors.

2003: AMD introduces the x86-64, a 64-bit superset of the x86 instruction set.

2004: AMD demonstrates an x86 dual-core processor chip.

2005: Intel ships its first dual-core processor chip.

2005: Apple announces it will transition its Macintosh computers from PowerPCs made by Freescale (formerly Motorola) and IBM to Intel's x86 family of processors.

2005: AMD files antitrust litigation charging that Intel abuses "monopoly" to exclude and limit competition. (The case is still pending in 2008.)

2006: Dell Inc. announces it will offer AMD processor-based systems.